State of California
AIR RESOURCES BOARD

Final Statement of Reasons for Rulemaking
Including Summary of Comments and Agency Response

PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE CALIFORNIA REGULATION REQUIRING DEPOSIT CONTROL ADDITIVES IN MOTOR VEHICLE GASOLINE

Public Hearing Date: September 24, 1998
Agenda Item No: 98-10-1

I. GENERAL

This rulemaking was initiated by the issuance of a public hearing notice and the Staff Report: Initial Statement of Reasons for Rulemaking (the Staff Report), which was available for public inspection on August 7, 1998. The notice was also mailed to each of the individuals described in government code section 11346.4(a)(1) through (4) on that date. The Staff Report, which is incorporated by reference herein, contains the text of the regulatory amendments as initially proposed by the staff, and an explanation of the rationale for the proposal. All of the proposed amendments pertained to the Air Resources Board (ARB\Board) regulation requiring deposit control additives in commercial gasoline for use in California motor vehicles (section 2257, title 13, California Code of Regulations (CCR)).

In September of 1990, the ARB adopted section 2257, title 13, CCR as proposed by staff. This regulation requires the effective use of deposit control additives in all commercial motor vehicle gasoline and began on January 1, 1992. Under the regulation, producers, importers, or distributors submit an application to the Executive Officer for certification of their gasoline formulation (i.e. gasoline plus additive) pursuant to the requirements of section 2257(c).

To receive a certification, the applicant must comply with certain administrative requirements and must also demonstrate that their gasoline formulation meets the performance standards established by the regulation. More specifically, the regulation requires that an applicant conduct specified vehicle tests on their gasoline formulation to show acceptable keep-clean performance in both port fuel injectors (PFIs) and intake valves. A separate test must also demonstrate acceptable clean-up performance for PFIs as well.

The amendments as originally proposed in this rulemaking affected various parts of the regulation. The original proposal to revise the performance standards of the regulation would lower the standard for intake valve deposit keep-clean performance to half the current standard, would eliminate the port fuel injector “clean up” standard, and would add a new standard for combustion chamber deposit performance. The original proposal would also specify criteria for the T90 distillation temperature of the certification test gasoline, and would

also require submittal of test gasoline blendstock information. Finally, the original proposal would void outdated gasoline certifications which do not meet the revised performance standards, and would update the applicable test methods referenced by the regulation.

The deposit control additive regulation (13 CCR 2257) requires the use of various test methods to comply with the performance standards. The amendments proposed by staff, and adopted by the Board, include revising these test methods to update the ASTM[1] test methods for intake valve and port fuel injector (PFI) deposit "keep clean" standards, to eliminate the ARB Stationary Source Division test method for PFI “clean up”, and to include a new ARB Stationary Source Division test method for measuring compliance with the combustion chamber deposit performance standard. These documents have been incorporated by reference because it would be cumbersome, unduly expensive and otherwise impractical to print them in the CCR. The documents are complicated and lengthy test procedures that would add unnecessary volume to a complex regulation. As the audience for these documents is very small -- primarily oil companies, gasoline distributors and additive manufacturers -- distribution to all holders of the CCR is not needed. Printing the ASTM test procedures in the CCR would also be impractical because the documents are copyrighted. Finally, it is a longstanding and accepted practice for the ARB to incorporate test methods by reference, and the affected public is accustomed to the format.

The ASTM and ARB Stationary Source Division's test methods were made available in the context of this rulemaking in the manner specified in Government Code section 11346.2(a) and section 20(c)(2), title 1, CCR. The ARB Stationary Source Division's Test Method for Evaluating Formation of Intake Valve and Combustion Chamber Deposits in Motor Vehicles was made available upon request from the ARB and was included as Appendix D to the Staff Report. The ASTM test methods are available directly from ASTM at 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428-2959, by telephone at (610) 832-9585, or by fax at (610) 832-9555.

At the September 24, 1998 hearing, the Board approved staff's proposals with modifications. Based on staff recommendations, a few minor corrections were made to the original proposal which clarify the requirements for gasoline certifications eligible for grandfathering, delete regulatory text left from a previous staff proposal, and incorporate by reference into the regulation, the new ARB vehicle test method for measuring combustion chamber deposits..

The Board approved Resolution 98-46 at the September hearing. Attachment A to the resolution contained the regulation as originally proposed with modifications as approved by the Board. In the resolution, the Board directed the Executive Officer to adopt the regulation

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1. ASTM, or American Society for Testing and Materials, is a prominent, not-for-profit organization that provides a forum for manufacturers and users of products, as well as academicians and government representatives, to prepare standards based on a consensus approach. Test methods are one type of standard adopted by the ASTM.

as approved, with such other conforming amendments as may be appropriate, after making the modified language available to the public for comment for a period of at least 15 days.

Pursuant to the Board's direction, the text of the modified amendments was made available for a period of at least 15 days from October 28, 1998, to November 12, 1998 for the public to comment on the modifications approved by the Board together with the Notice of Availability of Modified Text, which is incorporated by reference herein. Following completion of the 15-day notice period and after considering written comments received during that period, the Executive Officer issued Executive Order G-99-004 adopting the amendments to section 2257.

In taking this action, the ARB has determined that this regulatory action will not result in a mandate to any local agency or school district the costs of which are reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code.

The ARB has further determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

II. SUMMARY OF COMMENTS AND AGENCY RESPONSE

Comments on the original proposal were received from the American Automobile Manufacturers Association (AAMA), Chevron USA Products Company (Chevron), and Texaco Additives International. The AAMA and Texaco Additives International fully supported the Board's adoption of the modified proposal. However, general comments of support are not separately summarized below.

Comments on the Staff Report or Staff's Proposals:

Summarized below are the comments made by AAMA and Chevron during the 45-day comment period, which offered recommendations regarding the proposed amendments to the gasoline deposit control additive regulation. No comments were submitted regarding the procedures followed in proposing or adopting the regulation.

1. Comment: "The adoption by the Air Resources Board (ARB) of a CCD (Combustion Chamber Deposit) specification is a very important step forward in gasoline deposit control…However, the Board should be cognizant that there are PFID/IVD additive technologies which contribute virtually zero CCD, that those additives are cost-effective, and in fact, are currently used by some California gasoline marketers. The

Board should consider tighter CCD standards in conjunction with future Cleaner Burning Gasoline specifications." (AAMA)

Agency Response: The staff are aware of gasoline deposit control additives which are used commercially and produce little combustion chamber deposits. During the development of the combustion chamber deposit performance standard proposal, staff conducted a thorough evaluation of gasoline additive technology in order to base the performance standard. Staff also found that while some additive packages exhibited better combustion chamber deposit performance than others, in general all commercial additive packages produced deposits within a defined range. No data exists which shows the emission benefit of lower incremental combustion chamber deposit level beyond today's level. Therefore, staff proposed a combustion chamber deposit performance standard which will cap the existing deposit level within the California vehicle fleet. However, at the September Board hearing, staff also stated plans to monitor industry research efforts and to reassess the potential for a lower combustion chamber deposit standard at the appropriate time in the future.

2. Comment: During our review, we found that staff's calculation of NOx benefits in Appendix C may overestimate the benefit. This is the case because:

A) The data provided by the Coordinating Research Council which was used by staff to estimate incremental combustion chamber deposit weight for pre- and post- California Cleaner burning gasoline contained errors,

B) Staff's estimated NOx benefit was based on an emission/combustion chamber deposit mass correlation value which is not appropriate. The correct correlation value should actually be less than the value used by staff.

C) The CRC data was based on 15,000 mile vehicle tests, while other data used for pre- and post- California Cleaner burning gasoline based on 10,000 mile vehicle tests. Since 15,000 mile tests will result in higher combustion chamber deposit mass relative to 10,000 mile tests, then the emission/deposit mass correlation will be overestimated. (Chevron)

Agency Response: The NOx benefit estimate in Appendix C of the Staff Report was based on the most current data provided by industry. This data indicated that the NOx benefit associated with reduced combustion chamber deposits ranges from about six to nine percent. Staff utilized conservative assumptions which resulted in an estimated NOx reduction of seven percent. In comparison, Chevron's calculations (based on the comments above) resulted in a six percent NOx reduction.

3. Comment: "In the Proposed Regulation Order, there is a problem with (a)1[i] where an exemption to a new certification is provided for an existing certification obtained between July 1, 1996 and 30 days after the effective date of the amendments that meet the requirement of (c)(1)(A)(I). The problem occurs because with the updating of D 5500-94 to the current version D 5500-98, there are no existing certifications that have been granted under D 5500-98." (Chevron)

   Agency Response: Staff agrees with the comment made by Chevron and has corrected the regulation text language. The revised language was made available to the public through the notice of modified text (i.e. 15-day notice).

Comments Made During the 15-Day Comment Period on the Modifications to Staff's Original Proposals:

Because the Board approved staff's original proposal described in the Staff Report with modifications at the September 24, 1998 board hearing, a 15-day notice for supplemental public comment was provided to the public. However, no comments were received in response to the 15-day notice for supplemental public comment.